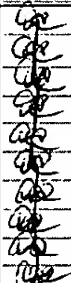


PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO			Complete if known		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Application Number	633,633	
			Filing Date	August 7, 2000	
			First Named Inventor	Brown et al.	
			Art Unit	2124 2762	
			Examiner Name	Chavis	
Sheet	1	of	7	Attorney Docket Number	ROYG-1-1001

Not Provided
Not Provided

U.S. PATENT DOCUMENTS						
Examiner Initials ¹	Cite No. ¹	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	U29	US	4,159,417	06/26/1979	Rubincam, David P.	
	U30	US	4,418,381	11/29/1983	Molusis, et al.	
Go	U31	US	4,713,808	12/15/1987	Gaskill et al.	Abstract only
Go	U32	US	4,767,334	08/30/1988	Throne et al.	" "
Go	U33	US	4,809,335	02/28/1989	Rumsey	" "
Go	U34	US	4,840,602	04/20/1989	Rose	" "
Go	U35	US	4,846,693	07/11/1989	Baer	" "
Go	U36	US	4,855,725	08/08/1989	Fernandez	" "
Go	U37	US	4,857,030	08/15/1989	Rose	" "
Go	U38	US	4,887,966	12/19/1989	Gellerman	" "
Go	U39	US	4,897,835	01/30/1990	Gaskill et al.	" "
Go	U40	US	5,120,065	06/09/1992	Driscoll et al.	" "
Go	U41	US	5,168,441	12/01/1992	Onarheim et al.	" "
Go	U42	US	5,377,258	12/27/1994	Bro	" "
Go	U43	US	5,392,207	02/21/1995	Wilson et al.	" "
Go	U44	US	5,402,518	03/28/1995	Lowery	" "
Go	U45	US	5,412,757	05/02/1995	Endo	" "
Go	U46	US	5,450,079	09/12/1995	Dunaway	" "
Go	U47	US	5,465,215	11/07/1995	Strickland et al.	" "
Go	U48	US	5,493,281	02/20/1996	Owens	" "

FOREIGN PATENT DOCUMENTS								
Examiner Initials ¹	Cite No. ¹	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶	
		Country Code ³	- Number ⁴ - Kind Code ⁵ (if known)					
	F04		Japanese 59-228473	06/09/1983				
	F05		EP 0 275 826 A1	07/27/1988	CIBA-GEIGY AG			
	F06		EP 0 442 676 A2	08/21/1991	IBM			
	F07		GB 2 244 896 A	12/11/1991	AG (Patents) Ltd.			
	F08		WO 92/11731	07/09/1992	Eastman Kodak			
	F09		EP 0 281 427 B1	08/05/1992	Pierce et al.			
	F10		EP 508 912 A1	10/14/1992	Info Telecom			
	F11		WO 93/08654	04/29/1993	Forte Communications			
	F12		EP 0 583 908 A2	02/23/1994	IBM			
	F13		WO 95/07504	03/16/1995	murco Communications			

Examiner Signature	Chavis, G. L.	Date Considered	3-20-03
-----------------------	---------------	--------------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
 required to respond to a collection of information unless it contains a valid OMB

Substitute for form 1449A/PTO

(use as many sheets as necessary)

Sheet	2	of	7
-------	---	----	---

Complete if Known:

Application Number	09/633,633
Filing Date	August 7, 2000
First Named Inventor	Brown et al
Art Unit	2124-2762
Examiner Name	Chavis
Attorney Docket Number	ROYG-1-1001

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No. 1	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
GA	U49	US- 5,596,994	01/28/1997	Bro	Abstract only
GA	U50	US- 5,600,373	02/04/1997	Chui et al.	" "
GA	U51	US- 5,607,336	03/04/1997	Lebensfeld et al.	" "
GA	U52	US- 5,617,528	04/01/1997	Stechmann et al.	" "
GA	U53	US- 5,636,994	10/04/1997	Tong	" "
GA	U54	US- 5,652,866	07/29/1997	Aldred et al.	" "
GA	U55	US- 5,655,945	08/12/1997	Jani	" "
GA	U56	US- 5,666,161	09/09/1997	Kohiyama et al.	" "
GA	U57	US- 5,670,992	09/23/1997	Yasuhara et al.	" "
GA	U58	US- 5,707,289	01/13/1998	Watanabe et al.	" "
GA	U59	US- 5,733,131	03/31/1998	Park	" "
GA	U60	US- 5,737,523	04/07/1998	Callaghan et al.	" "
GA	U61	US- 5,746,602	05/05/1998	Kikinis	" "
GA	U62	US- 5,764,155	06/09/1998	Kertesz et al.	" "
GA	U63	US- 5,790,178	08/04/1998	Shibata et al.	" "
GA	U64	US- 5,907,704	05/25/1999	Gudmundson et al.	" "
GA	U65	US- 5,914,876	06/22/1999	Hirai	" "
GA	U66	US- 5,800,268	09/01/1998	Molnick	" "
GA	U67	US- 5,801,946	09/01/1998	Nissen et al.	" "
GA	U68	US- 5,818,537	10/06/1998	Enokida et al.	" "

FOREIGN PATENT DOCUMENTS

[illegible]

**Examiner
Signature**

Chas. J. P.

Date
Considered

3-20-03

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique classification designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.



Approved for use through 10/31/2002 OMB 0651-0081
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

RECEIVED
4/26/03
TECHNOLOGY CENTER 2100

Substitute for form 1449B/PTO		Complete if Known			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/633,633		
		Filing Date	August 7, 2000		
		First Named Inventor	Brown, et al.		
		Group Art Unit	2124 2762		
		Examiner Name	Chen		
Sheet	4	of	7	Attorney Docket Number	ROYG-1-1001

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
CP	017	WRIGHT et al.; "Open Architecture Manufacturing: The Impact of Open-System Computers on Self-Sustaining Machinery and Machine Tool Industry"; 7 pages; pp.	
CP	018	ALTINTAS et al.; "Design and Analysis of a Modular CNC System"; pub. 3/4/90; 8 pages; Elsevier Science Publishers; pp. 305-316.	
CP	019	ROBERT ANDERSON; "SMART: A Modular Architecture for Robotics and Teleoperation"; pub. 1993; IEEE; 6 pages; pp. 416-421.	
CP	020	MICROSOFT; "Object Linking and Embedding 2.0 Backgrounder"; pub. 9/93; 15 pages; pp. 1-15.	
CP	021	MICROSOFT; "Microsoft OLE Today and Tomorrow: Technology Overview"; pub. 12/93; 9 pages; pp. 1-9.	
CP	022	PRITSCHOW et al.; "Open System Controllers - A Challenge for the Future of the Machine Tool Industry"; pub 1/14/93; CIRP; 4 pages; pp. 449-452.	
CP	023	WEB 3.0 Product Brochure; Trihedral Engineering Ltd.; pub. 1994; 6 pages.	
CP	024	CHEN et al.; "Computer Numerical Control: Essentials in Programming and Networking"; pub. 1994; Delmar Publishers, Inc.; 28 pages; Part 5, Chapter 27; pp. 824-848.	
CP	025	CHU et al.; "Development of a Practical SFC System for CNC Machine Shop"; pub. 1994; 5 pages; 362-367.	
CP	026	MICROSOFT; "The Microsoft Object Technology Strategy"; pub. 3/94; 33 pages; pp. 1-33.	
CP	027	MICROSOFT; "Open Systems: Technology Leadership and Collaboration"; pub. 3/94; 15 pages; pp. 1-15.	

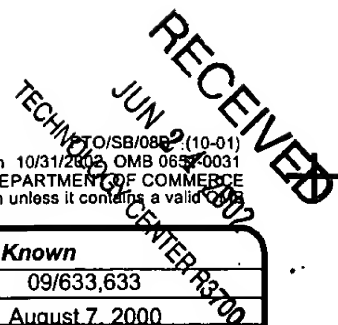
RECEIVED
SEP 18 2002
Technology Center 2100

Examiner Signature	Chen, G. P.	Date Considered	3-22-03
--------------------	-------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Approved for use through 10/31/2003, OMB 0637-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid control number.

Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/633,633
		Filing Date	August 7, 2000
		First Named Inventor	Brown, et al.
		Group Art Unit	2124 2782
		Examiner Name	Chavis
		Attorney Docket Number	ROYG-1-1001
Sheet	5	of	7

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials [*]	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
JP	028	WILLIAM F. FORD; "What is an Open Architecture Robot Controller?"; pub. 8/16/94; IEEE Control Systems Society; 6 pages; pp. 27-32.	
JP	029	"Requirements of Open, Modular Architecture Controllers for Applications in the Automotive Industry"; pub. 12/13/94; Version 1.1; 13 pages; pp. 1-13.	
JP	030	FEDROWITZ; "IRL-Based Expansion of the Commonly Used High-Level Language for Robot Programming"; pub. 10/95; 5 pages.	
JP	031	JOHN JACKMAN; "Robotic Control Using Sequential Function Charts"; pub. 1996; SPIE; 9 pages; pp. 120-128.	
JP	032	MCGRAW et al.; "A Friendly Command, Control, and Information System for Astronomy"; pub. 1996; ASP Conference Series; 12 pages; pp. 356-367.	
JP	033	PROCTOR et al.; "Validation of Standard Interfaces for Machine Control"; pub. 1996; 6 pages; pp. 659-664.	
JP	034	SPERLING et al.; "Enabling Open Control Systems - An Introduction to the OSACA System Platform"; pub. 5/96; 8 pages; pp.1-8.	
JP	035	"NEMI Low Cost Controller Project"; pub. 12/96; NEMI; 392 pages; pp. 1-392.	
JP	036	"Technologies Enabling Agile Manufacturing (TEAM) Intelligent Closed Loop Processing"; pub. 1/11/96; 30 pages; pp.1-30.	
JP	037	"Open, Modular Architecture Controls at GM Powertrain - Technology and Implementation"; pub. 5/14/96; Version 1.0; GM Powertrain Group Manufacturing Engineering Controls Council; 39 pages; pp. 1-39.	
JP	038	MARCOS et al.; "A New Solution for Integrating Control Devices Involved in Computer Integrated Manufacturing"; pub. 9/2/96; IEE; 6 pages; pp. 485-490.	

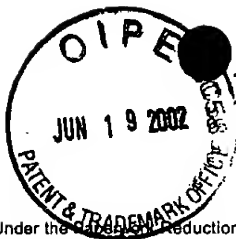
RECEIVED
SEP 18 2002
Technology Center 2100

Examiner Signature	Chavis J. P.	Date Considered	3-20-03
--------------------	--------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Under the American Invention Promotion Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Approved for use through 10/31/2002, OMB 0691-0033
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/633,833
		Filing Date	August 7, 2000
		First Named Inventor	Brown, et al.
		Group Art Unit	2124-2782
		Examiner Name	Charles
Sheet 6 of 7	Attorney Docket Number	ROYG-1-1001	

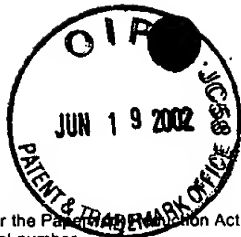
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS); title of the article (when appropriate); title of the item (book, magazine, journal, serial, symposium, catalog, etc.); date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
CP	039	PROCTOR et al.; "Open-Architecture Controllers"; pub. 6/97; IEEE; 5 pages; pp. 60-64.	
CP	040	SZABO et al.; "Validation Results of Specifications for Motion Control Interoperability"; pub. 9/97; 11 pages; pp. 166-176.	
CP	041	FENG et al.; "Distributed Control of a Multiple Tethered Mobile Robot System for Highway Maintenance and Construction"; pub. 11/97; 10 pages; pp. 383-392.	
CP	042	LUTZ et al.; "OSACA - The Vendor Neutral Control Architecture"; pub. 12/97; 10 pages.	
CP	043	SPERLING et al.; "Designing Applications for an OSACA Control"; pub. 11/16/97; 5 pages.	
CP	044	CHANG et al.; "Development and Implementation of An Application of an Application Programming Interface for PC/DSP Based Motion Control System"; Pub. 1998; 12 pages; p. 94-105.	
CP	045	MORALES et al.; "A Generalised Software Control System for Industrial Robots"; pub. 1998; AMC; 6 pages; pp. 411-416.	
CP	046	MUIR et al.; "A Three-Layer Workcell Control Architecture Design"; pub. 5/98; IEEE; 7 pages; pp. 1185-1191.	
CP	047	MUIR et al.; "Mechatronic Objects for Real-Time Control Software Development"; pub. 11/98; SPIE; 15 pages; pp. 251-265.	
CP	048	LEU et al.; "A Telemanufacturing Workcell Over the Internet"; pub. 11/98; SPIE; 8 pages; pp. 230-237.	
CP	049	MICHALOSKI et al.; "A Framework for Component-Based CNC Machines"; pub. 11/98; SPIE; 12 pages; pp. 132-143.	

Examiner Signature	Charles, J. P.	Date Considered	3-20-03
--------------------	----------------	-----------------	---------

¹EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Under the Patent and Trademark Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

PTO/SB/08B (10-01)
Approved for use through 10/31/2002, P.O. 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449B/PTO		Complete Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/633,633
		Filing Date	August 7, 2000
		First Named Inventor	Brown, et al.
		Group Art Unit	2124, 2782
		Examiner Name	Chavis
Sheet 7 of 7	Attorney Docket Number	ROYG-1-1001	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
CP	050	EMILIO MORALES; "GENERIS: The EC-JRC Generalised Software Control System for Industrial Robots"; pub. 1998; University Press; Volume 26; 7 pages; pp. 26-33.	
CP	051	MIZUKAWA et al.; "De-Facto Standard API for Open and Networked Industrial Robots"; pub. 10/99; 8 pages; pp. 455-462.	
CP	052	CHO et al.; "A Compact/Open Network-Based Controller Incorporating Modular Software Architecture for a Humanoid Robot"; pub. 4/19/99; Kluwer; 15 pages; pp. 341-355.	
CP	053	NILSSON et al.; "Integrated Architecture for Industrial Robot Programming and Control"; pub. 5/20/99; Elsevier Science B.V.; 22 pages; pp. 205-226.	
CP	054	VALERA et al.; "Interactive On-Line Evaluation of Robot Motion Control"; pub. 8/2/99; IEEE; 5 pages; pp. 1039-1043.	
CP	055	NATALE et al.; "Robust Hybrid Force / Position Control with Experiments on an Industrial Robot"; pub. 9/19/99; 5 pages; pp. 956-961.	
CP	056	MIZUKAWA et al.; "ORiN: Open Robot Interface for the Network, A Proposed Standard"; pub. 5/00; MCB University Press; 7 pages' pp. 344-350.	
CP	057	EROL et al.; "Open System Architecture Modular Tool Kit for Motion and Machine Processing Control"; pub. 9/00; IEEE/ASME; 11 pages; pp. 281-291.	
CP	058	GE et al.; "A One-Stop Solution in Robotic Control System Design"; pub. 9/00; IEEE; 14 pages; pp. 42-55.	

Examiner Signature	Chavis, J. P.	Date Considered	3-28-03
--------------------	---------------	-----------------	---------

¹ EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.